3.7 WETLANDS

As stated in the U.S. Army Corps of Engineers (USACE) *Wetlands Delineation Manual* (1987), wetlands are "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas." Wetlands serve a number of important ecological functions. They help maintain water quality by slowly filtering excess nutrients, sediments, and pollutants before water seeps into other surface water or groundwater. Wetlands also help to absorb fast-flowing stormwater to aid in flood prevention and offer a breeding ground and/or habitat for fish, wildlife, and plants.

Presidential Executive Order (EO) 11990, "Protection of Wetlands," requires federal agencies to avoid (to the extent practicable) both long-term and short-term adverse impacts associated with the destruction or modification of wetlands. More specifically, EO 11990 directs federal agencies to avoid construction in wetlands unless there is no reasonable alternative and states that where wetlands cannot be avoided, the proposed action must include all practicable measures to minimize impacts to wetlands.

Wetlands are also regulated by the USACE under Section 404 of the Clean Water Act (CWA). Section 404 requires that impacts to wetlands be avoided or minimized to the extent practicable during construction projects and requires that CDOT obtain a permit from the USACE before filling or dredging can occur in jurisdictional wetlands. Section 404 also requires that unavoidable impacts to wetlands be minimized and mitigated through restoration or creation of additional wetland acreage. Jurisdictional wetlands are those regulated by the USACE under Section 404 of the CWA, whereas non-jurisdictional wetlands are not regulated by the USACE but must still be identified and mitigated for if impacted, in accordance with CDOT's *Project Development Manual* (2001). Based on EO 11990, CDOT's wetland policy emphasizes a "no net loss" of wetland resources and requires mitigation for all unavoidable impacts to wetlands, regardless of jurisdictional status.

In addition, wetlands are provided protection under Colorado Senate Bill (SB) 40 (33-5-101-107, Colorado Revised Statutes [CRS] 1973). The SB 40 clearance is administered by the Colorado Parks and Wildlife (CPW) and is required when a project may impact any stream, river, lake, or riparian habitat. (A riparian zone is the interface between land and a stream, river, or lake.) To maintain compliance with SB 40, a transportation project must demonstrate that measures have been taken to lessen or avoid impacts to protected waters, wetlands, and riparian habitat. The Arkansas River and Fountain Creek, as well as adjacent wetlands and riparian habitat, are located within the project corridor and may potentially be impacted by the project.

3.7.1 Affected Environment

Existing data and field surveys were used to characterize potential wetland areas within the project area. A field survey of the project area was conducted in 2003 to verify the presence or absence of potential wetland areas located with the project area. Wetlands in the study area were identified and boundaries were delineated using the procedures in the *USACE Wetlands Delineation Manual* (USACE, 1987).

A total of seven wetland areas (labeled WL-1 through WL-4, and WL-5a, 5b, and 5c) and three waters of the U.S., as defined under Section 404 of the CWA (the Arkansas River, Fountain Creek, and Runyon Lake), were identified during the field survey, as shown in **Exhibit 3.7-1**. The USACE issued a preliminary jurisdictional determination in a letter dated January 26, 2012, following a field visit with the CDOT project team. Six of the seven identified wetland areas and the three waters of the U.S. were determined to be jurisdictional; WL-1 was determined to be non-jurisdictional.

In May 2010, CDOT staff conducted a Functional Assessment of Colorado Wetlands (FACWet) analysis of wetlands in the study area, resulting in a Functional Capacity Index (FCI) score for each wetland. FCI provides a comparison of how an individual wetland performs compared to others of its type. A score of 1 is optimal functional capacity, and a score of 0 is no functional capacity.

EXHIBIT 3.7-1
Wetlands and Waters of the U.S. within Project Area

Wetland and Open Water Areas	Jurisdictional Determination	Cowardin Classification System[1]	Acreage within Project Area
WL-1	Non-jurisdictional	PEM/PFO	4.04
WL-2	Jurisdictional	PEM/PFO	1.06
WL-3	Jurisdictional	PSS/PFO	0.39
WL-4	Jurisdictional	PEM	0.10
WL-5a	Jurisdictional	PSS/PFO	1.80
WL-5b	Jurisdictional	PEM/PFO	4.35
WL-5c	Jurisdictional	PEM	2.11
Arkansas River	Jurisdictional	Riverine	9.06
Fountain Creek	Jurisdictional	Riverine	25.76
Runyon Lake	Jurisdictional	Riverine	2.42

Source: CH2M HILL, 2010e.

[1] The wetland areas were categorized using the Cowardin Classification System as follows (Cowardin, et. al, 1979):

Palustrine Emergent (PEM): Characterized by erect, rooted, herbaceous hydrophytes (water-loving plants), excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants. All water regimes are included except subtidal and irregularly exposed.

Palustrine Scrub Shrub (PSS): Includes wetland areas dominated by woody vegetation less than 20 feet tall. The species include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. All water regimes except subtidal are included.

Palustrine Forested (PFO): Similar to the PSS Classification; however, the PFO Classification is characterized by woody vegetation that is 20 feet tall or taller.

Riverine: Includes all wetlands and deepwater habitats contained within a channel with the exception of wetlands dominated by trees, shrubs, persistent emergents, and emergent mosses or lichens, as well as habitats with water containing ocean-derived salts in excess of 0.5 percent.

Although wetland area WL-2 was determined to be functioning impaired in terms of habitat connectivity and buffer capacity, it received a composite FCI score of 0.82. This relatively high score was due to the fact that this wetland is still highly functioning in terms of water storage, nutrient/toxicant removal, flood attenuation, and supporting aquatic habitat. Weed species constituted a minor portion of the wetland vegetation. Other wetlands within the study area were assessed with scores roughly equal to that of WL-2 or lower. Vegetation in other wetland areas included native species with a minor to moderate mixture of noxious weeds, exotic or invasive species, and cattails.

The wetland areas are primarily concentrated along the Arkansas River and Fountain Creek corridors. In addition to providing flood attenuation during periods of high water, the wetlands provide nesting habitat for migratory birds as well as food and habitat for other wildlife common to the area. Because the majority of wetlands in the project corridor are located in the low-lying areas adjacent to the Arkansas River and Fountain Creek, they have largely been avoided by roads. **Exhibits 3.7-2 through 3.7-5** illustrate the location of the seven wetland areas throughout the corridor.

A Wetland Finding has been prepared as part of the New Pueblo Freeway FEIS and is included in **Appendix D**. The Wetland Finding contains detailed descriptions of the specific wetland areas identified within the project area. This section presents relevant information from the Wetland Finding report related to project impacts. Detailed discussions of the proposed mitigation and a list of avoidance and minimization measures are included in the Wetland Finding in **Appendix D**.

EXHIBIT 3.7-2
Wetlands in the North Area (Phase 1)

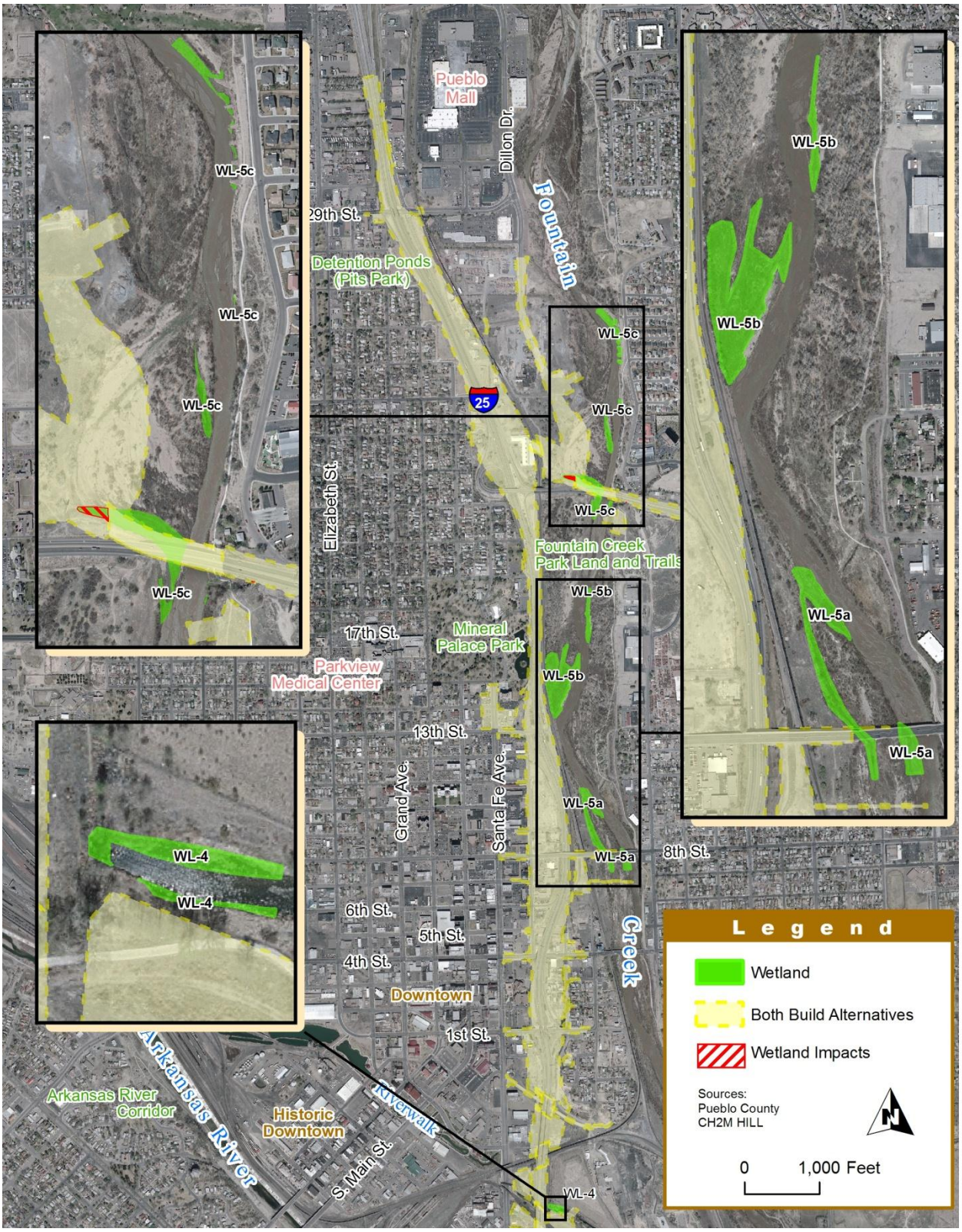


EXHIBIT 3.7-3
Wetlands in the South Area (Phase 2)

EXHIBIT 3.7-4
Wetlands in the Central Area (Phase 2) – Existing I-25 Alternative

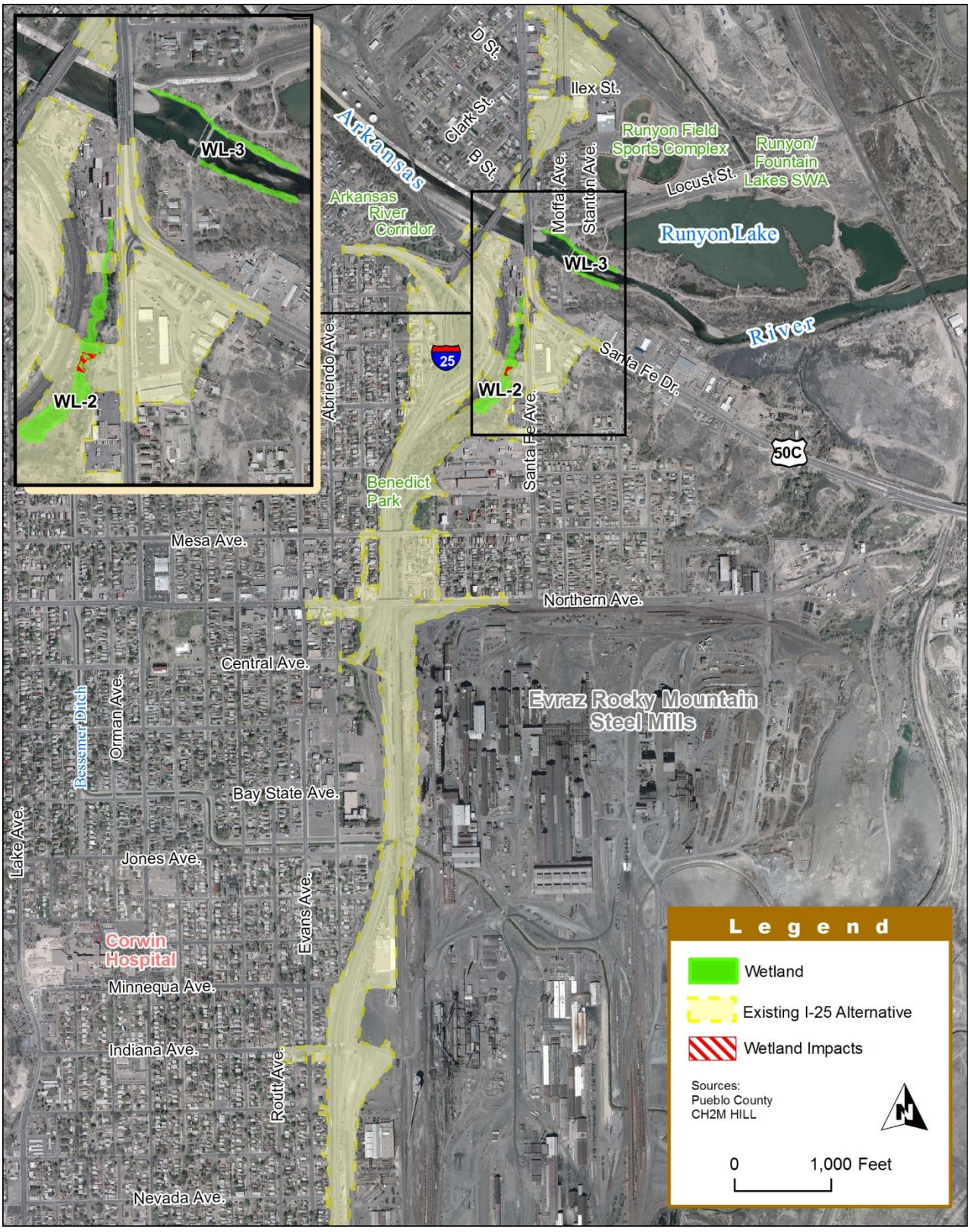
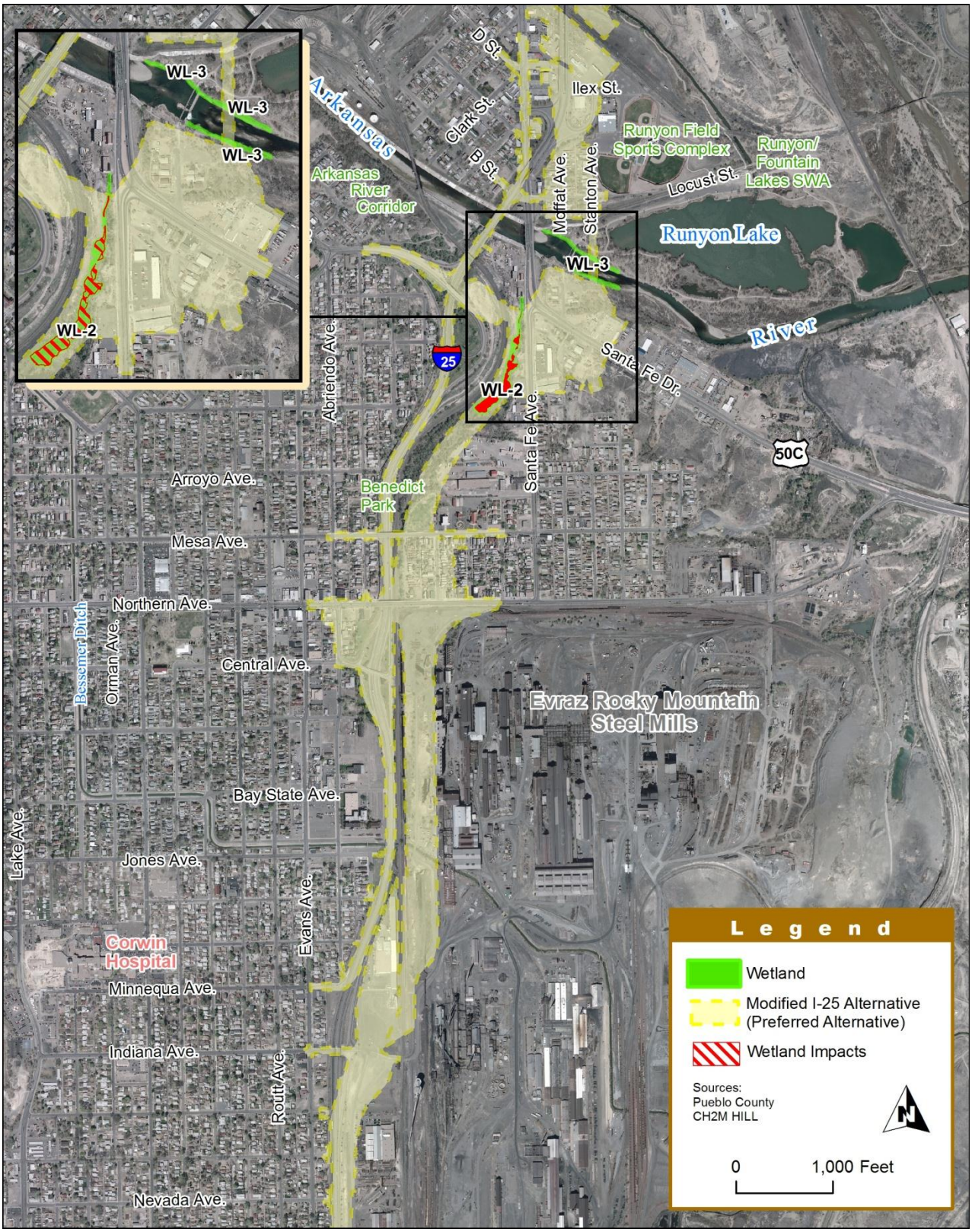


EXHIBIT 3.7-5
Wetlands in the Central Area (Phase 2) – Modified I-25 Alternative (Preferred Alternative)



3.7.2 Environmental Consequences

3.7.2.1 No Action Alternative

No wetlands or waters of the U.S. would be directly impacted under the No Action Alternative. However, it is expected that wetlands in the project area that are currently affected by the influx of pollutants contained in highway runoff (such as, sands, deicing salts, and contaminants from vehicles) would continue to degrade over time.

3.7.2.2 Build Alternatives

North Area (Phase 1)

As shown in **Exhibit 3.7-2**, wetland impacts in the North Area (Phase 1) would be limited to WL-5c, which is part of a larger complex of fringe wetlands located along Fountain Creek. Specifically, as shown in **Exhibit 3.7-6**, 0.13 acre of WL-5c would be impacted by construction activities associated with the extension of Dillon Drive near US 50B.

South Area (Phase 2)

As shown in **Exhibit 3.7-3**, wetland impacts in the South Area (Phase 2) would be limited to WL-1, a detention pond. WL-1 would be impacted because the Greenhorn Drive extension requires placement of a box culvert in the drainage ditch that extends south out of WL-1, resulting in the loss of 0.02 acre of the total 4.04-acre wetland (see **Exhibit 3.7-7**). An existing box culvert is already in place at the north crossing. The remainder of the wetland would not be impacted as the main portion of the wetland located northeast of the interchange would be avoided.

Central Area (Phase 2)

Existing I-25 Alternative

As shown in **Exhibit 3.7-4** and **Exhibit 3.7-8**, a total of 0.07 acre of wetland impacts would occur in the Central Area (Phase 2) under the Existing I-25 Alternative. Wetland impacts would be limited to WL-2, which would be fragmented and divided in half. Impacts would occur due to the extension of Abriendo Avenue to connect to Santa Fe Drive east of I-25. The single bridge pier currently in place at the Arkansas River crossing would be removed and replaced; however, the new pier would be placed in the same locations as the existing pier and designed to occupy a slightly smaller footprint. In addition, the bridge on Santa Fe would be widened, and the existing pier would be extended. As a result, there would be no net increase in impact acreage to the Arkansas River.

Modified I-25 Alternative (Preferred Alternative)

As shown in **Exhibit 3.7-5** and **Exhibit 3.7-9**, a total of 0.95 acre of unavoidable impacts to wetlands would occur in the Central Area (Phase 2) under the Modified I-25 Alternative (Preferred Alternative). These impacts would include 0.93 acre of wetland impacts to WL-2 and 0.02 acre of open water impacts to the Arkansas River. The Modified I-25 Alternative (Preferred Alternative) would almost entirely remove WL-2 to accommodate the bridge abutments over Abriendo Avenue on the realigned I-25. Impacts to the Arkansas River would occur due to the placement of eighteen new bridge piers in the Arkansas River to support the bridges for I-25, two ramps, and the extension of Stanton Avenue. The existing bridge piers that carry I-25 would remain within the Arkansas River to carry the repurposed Santa Fe Avenue. The old Santa Fe/US 50B Bridge over the Arkansas River would be removed, which would remove one existing pier from the Arkansas River.

3.7.2.3 Indirect Effects

No Action Alternative

Increased traffic and congestion on I-25 might increase pollutants in the untreated runoff that makes its way to wetlands, Fountain Creek, and the Arkansas River. However, commercial and industrial buildings surrounding the existing bridges have already heavily disturbed and fragmented the area.

Build Alternatives

Indirect impacts related to the Build Alternatives might include hydrological changes such as the alteration of surface drainage patterns, water quality, and quantity; the modification of groundwater levels and quantities; and the reduction or elimination of upland tree or shrub buffers between the proposed roadway and wetlands or non-wetland waters. Other indirect impacts might include soil erosion, water runoff, and dust, which may promote degradation of wetland vegetation and introduce noxious weeds.

EXHIBIT 3.7-6
North Area (Phase 1) Wetland Impacts

Wetland Area	Acreage within Project Area	Impacted Area (acres)
WL-5c	2.11	0.13
Total Impacted Area	-	0.13

Source: CH2M HILL, 2010e.

EXHIBIT 3.7-7
South Area (Phase 2) Wetland Impacts

Wetland Area	Acreage within Project Area	Impacted Area (acres)
WL-1 (non-jurisdictional)	4.04	0.02
Total Impacted Area	-	0.02

Source: CH2M HILL, 2010e.

EXHIBIT 3.7-8
Central Area (Phase 2) Wetland Impacts – Existing I-25 Alternative

Wetland Area	Acreage within Project Area	Impacted Area (acres)
WL-2	1.06	0.07
Total Impacted Area	-	0.07

Source: CH2M HILL, 2010e.

EXHIBIT 3.7-9
Central Area (Phase 2) Wetland and Open Water Impacts – Modified I-25 Alternative (Preferred Alternative)

Wetland Area	Acreage within Project Area	Impacted Area (acres)
WL-2	1.06	0.93
Arkansas River	9.06	0.02
Total Impacted Area	-	0.95

Source: CH2M HILL, 2010e.

3.7.3 Mitigation

To the extent practicable, impacts to wetlands were avoided as part of the alternatives development process as described in the Wetland Finding report (see **Appendix D**). However, complete avoidance of the wetlands areas was not possible due to the developed nature of the project area and the limited options for realignment.

Unless otherwise specified, the following mitigations apply to both the Existing I-25 Alternative and the Modified I-25 Alternative (Preferred Alternative).

- Once funding for construction of the project is identified, wetland boundaries will be re-evaluated to determine the need for additional delineations to confirm wetland boundaries.
- CDOT will obtain the appropriate Section 404 permit from the USACE under Section 404 of the CWA prior to construction. The policy of CDOT is to replace all

wetlands on a one-for-one basis. A wetland mitigation plan will be prepared as part of the Section 404 permitting process to mitigate for unavoidable impacts to area wetlands and waters of the U.S. While there are several potential mitigation locations within the study area, CDOT and FHWA will work with USACE staff to identify the best mitigation location and concept to replace the values of the impacted wetlands.

- CDOT will coordinate potential wetland mitigation locations with CPW and will provide CPW with the Section 404 permit for review.
- Additional mitigation measures that were identified by the USACE during a 2006 field visit include:
  - Place tree cuttings at the trailhead near the mouth of Fountain Creek.
  - Place tree cuttings along Fountain Creek at SH 47.
  - Place tree plantings near the Eagle Ridge interchange project, located north of the New Pueblo Freeway Project on I-25.
- Following final design, CDOT will apply for an SB 40 Wildlife Certification if the project does not fall within CDOT's Programmatic Agreement with the CPW, including detailed plans and specifications. The CPW will review the plans to make sure they are technically adequate to protect and preserve fish and wildlife species and will provide recommendations or alternative plans if the project would adversely affect riparian areas along the Arkansas River or Fountain Creek.
- Best Management Practices (BMPs) will be used to control erosion and sedimentation during construction. In addition to construction BMPs, temporary impacts due to construction activities will be managed and minimized by the following actions:
  - Construction impact boundaries will be clearly marked. Wetlands outside the authorized temporary impact areas will be clearly marked and fenced (orange and silt fencing) to prevent disturbance during construction.
  - Excavated materials will be removed to a stabilized upland site to prevent erosion back into the wetland areas.
  - Onsite storage of hazardous construction materials including fuels and oils will be located away from wetland and riparian areas to minimize the potential for spills or leaching into aquatic habitats.
  - Compliance inspections during construction are recommended to ensure adherence to BMPs, including erosion and sedimentation controls, and minimization of construction impacts.
  - All areas temporarily disturbed by construction activities will be restored and revegetated.
  - All salt cedar and Russian olive within the construction area will be removed.

3.7.4 Least Environmentally Damaging Practicable Alternative

The primary difference between the two Build Alternatives is that the Modified I-25 Alternative (Preferred Alternative) would result in a greater area of WL-2 being impacted due to the realignment of I-25. Impacts to the Arkansas River under the Modified I-25 Alternative (Preferred Alternative) would also be greater due to the increased number of bridge piers required to span the Arkansas River compared to the Existing I-25 Alternative. Impacts to WL-1 and WL-5c would be the same under both alternatives, and only a small amount of both wetlands would be affected. Total wetland impacts differ by less than 1 acre, with the Modified I-25 Alternative (Preferred Alternative) impacting 0.88 acre more wetlands than the Existing I-25 Alternative. Based on a 2010 FACWet study conducted by CDOT, WL-2 (which is impacted more by the Modified I-25 Alternative (Preferred Alternative) than by the Existing I-25 Alternative) is a highly functioning wetland, with several functional values determined to be impaired. Impacts to waters of the U.S. are nearly equal between the alternatives, with the Modified I-25 Alternative (Preferred Alternative) impacting just 0.02 acre of the Arkansas River. The impact would be greater due to the increased number of bridge piers required to span the Arkansas River.

The wetland resources impacted by the Build Alternatives are unavoidable. An alternative must be considered the Least Environmentally Damaging Practicable Alternative (LEDPA) to be permitted under the Clean Water Act. Although the Existing I-25 Alternative has the least adverse effect on the aquatic environment, the Modified I-25 Alternative (Preferred Alternative) (with the proposed mitigation) appears to cause the least overall harm to

Section 4(f) properties, as described in **Chapter 4 –Section 4(f) Evaluation**. The selection of the Existing I-25 Alternative as the LEDPA would cause non-compliance with Section 4(f) legislation and thus is not considered practicable. Therefore, FHWA and CDOT have identified the Modified I-25 Alternative (Preferred Alternative) as the LEDPA for detailed evaluation, and this was concurred upon by the USACE in December 2010. This coordination is documented in **Appendix B**.